IN THE CLAIMS:

1. (Previously Presented) A virtual environment system, comprising:

an acoustic localizer adapted to determine the location of sound sources in a local environment, said acoustic localizer comprising a plurality of microphones arrayed to span the three coordinate axes of a three dimensional space, wherein for each pair of microphones along each coordinate axis, wherein there is a delay difference δ between an arrival time of a sound signal at each microphone of said pair, said sound source location is estimated by forming a surface for each said microphone pair comprising a locus of points that induce said delay difference in said pair of microphones and forming an interception of each surface for each said axis pair to estimate a location of said sound source, wherein an error Δ in one direction for said source location is given by

$$\Delta = 2\sqrt{\frac{2D^2}{\alpha - 1} - \frac{2\beta}{\alpha + 1}};$$

wherein

$$\alpha = \frac{8d^2 f^2}{c^2} - 1, \qquad \beta = -\frac{d^2}{4},$$

wherein D is a largest distance a microphone pair and said sound source location as projected along said one direction, d is a closest distance between microphone pairs, f is a sampling frequency, and c is a speed of propagation for said sound signal.

2. (Canceled)

3. (Previously Presented) The system of claim 21 wherein at least a portion of said data acquired from said remote world is transmitted to said user through said user data I/O device.

4. (Previously Presented) The system of claim 21 wherein said user data I/O device comprises a video display and sound input and output systems.

5. (Original) The system of claim 4 wherein said user data I/O device is a personal digital assistant.

6. (Original) The system of claim 4 wherein said video display is augmented with data received from said system controller.

7. (Previously Presented) The system of claim 21 wherein said system controller is in wireless communication with said user data I/O device.

8. (Previously Presented) The system of claim 21 wherein said remote data I/O device comprises a robotic camera.

9. (Original) The system of claim 8 wherein said robotic camera comprises a remote-controlled camera mounted on a robotic platform.

10. (Previously Presented) The system of claim 21 wherein said system controller is in wireless communication with said remote data I/O device.

11. (Previously Presented) The system of claim 21 wherein the orientation of said user is determined by the location of said user in relation to the location of said user data I/O device as detected by said acoustic localizer.

12. (Previously Presented) The system of claim 21 wherein one or more operations of said remote I/O device within said remote world are commanded by said user through voice commands.

13. (Previously Presented) The system of claim 21 wherein said system controller comprises:

an audio signal processing module adapted to control, and process information received from, said acoustic localizer;

a speech recognition module adapted to translate voice commands from said user into data commands;

a user data I/O device socket server adapted to receive data from said user data I/O device and passing them to other system devices;

a media services control server adapted to receive said user commands from said user data I/O device socket server and adapted to manage the flow of data to said data user I/O device from said remote data I/O device;

a remote data I/O device control module adapted to receive commands from said speech recognition module and from said media services control server and process said commands to control said remote data I/O device; and

a media encoder/streamer adapted to stream data to said data user I/O device from said remote data I/O device under the control of said media services control server.

14. (Canceled)

15. (Currently Amended) A method of remotely experiencing a remote world from a local environment, comprising:

providing an acoustic localizer in the local environment, said acoustic localizer adapted to detect the position of sound sources, said acoustic localizer comprising a plurality of microphones arrayed to span the three coordinate axes of a three dimensional space, wherein for each pair of microphones along each coordinate axis, wherein there is a delay difference δ between an arrival time of a sound signal at each microphone of said pair; and

estimating said sound source location by forming a surface for each said microphone pair comprising a locus of points that induce said delay difference in said pair of microphones and forming an interception of each surface for each said axis pair to estimate a location of said sound source, wherein an error Δ in one direction for said source location is given by

$$\Delta = 2\sqrt{\frac{2D^2}{\alpha - 1} - \frac{2\beta}{\alpha + 1}};$$

wherein

$\alpha = \frac{8d^2 f^2}{c^2} - 1$, $\beta = -\frac{d^2}{4}$,

wherein D is a largest distance a microphone pair and said sound source location as projected along said one direction, d is a closest distance between microphone pairs, f is a sampling frequency, and c is a speed of propagation for said sound signal.

16. (Previously Presented) The method of claim 20 wherein said remote data I/O device in said remote world is controlled by at least one of:

the detected position of a user in said local environment;

voice commands from said user; and

the orientation of said user.

17. (Previously Presented) The method of claim 20 wherein the spatial positioning of said remote data I/O device in said remote world is controlled by the detected position of said user in said local environment.

18. (Previously Presented) The method of claim 20 wherein data acquired from said remote world is transmitted to said user.

19. (Previously Presented) The method of claim 18 wherein at least a portion of said data acquired from said remote world is transmitted to said user through said user data I/O device.

20. (New) The method of claim 15, further comprising:

providing a remote data I/O device in the remote world;

providing a user data I/O device in the local environment;

providing a system controller in data communication with said remote data I/O device, acoustic localizer, and user data I/O device;

wherein said system controller is adapted to control said remote data I/O device in response to data received from said local environment.

21. (New) The system of claim 1, further comprising:

a user data I/O device;

a remote data I/O device in a remote world;

a system controller in data communication with said acoustic localizer, user data I/O device, and remote data I/O device;

wherein control of said remote data I/O device within said remote world are commanded by said system controller in response to movements of a user as detected by said acoustic localizer; and

wherein data acquired from said remote world by said remote data I/O device is transmitted to said user.

22. (Canceled)